

13

# Length of Life of Apple Trees in Minnesota

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# Notes on the Length of Life of Apple Trees in Minnesota\*

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THE longevity of an apple tree is determined by many different factors. Selection of sites and varieties and the subsequent care of the trees may be managed in such widely differing ways that trees in some cases will live several times as long as in other cases. In Minnesota, where apple trees are not long lived as a rule, this wide variation in length of life has been recognized for a long time. In the Experiment Station, M. J. Dorsey and C. Haralson have worked for years to develop hardy varieties and to analyze hardness in the effort to produce longer lived trees.

It is difficult to separate out the effect of climate from other factors affecting longevity. If the varying sites, different cultural methods, varieties, structural weaknesses, and the effects of insects and diseases be disregarded, it will be found that climatic factors, such as severe winter cold, drying winds, and summer drought, take a heavy toll in Minnesota orchards. No systematic study of the life duration of varieties has been attempted, but our Experiment Station workers have estimated 30 years as the average for all varieties grown under our conditions.

In a cost of production survey in Minnesota some interesting data on the life of trees were obtained. In 64 orchards included in the survey the range in age was 8 to 36 years (on the basis of 1920.) Only two of the orchards were over 25 years old, and the mean age was 15.6 years. Table I shows the grouping according to age, the number of orchards, and the average in each group for 58 of the orchards surveyed.

TABLE I.  
*Age Grouping of 58 Bearing Orchards in Minnesota*

Group No.	Age of Trees	Number of Orchards	Number of Acres
1	8 to 13	13	83.5
2	14 to 19	34	232.2
3	20 to 36	11	44.1
Mean	15.6	Total 58	359.8

While this table shows that the majority of the orchards considered were planted between 1900 and 1906, it also indicates that the older orchards are few in number. About as many more orchards from 20 to 36 years of age were visited, but could not be included in the survey on account of the poor condition of the trees. To judge from the condition of these older orchards and also of those in group 2, the latter will be failing when ten or fifteen years are added to their age.

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The average life history of an apple tree in Minnesota is to commence bearing at 6 to 8 years after planting, reach its maximum production at about 20 years and then gradually fail. Apparently this is due in the main to the effect of climate, or to lack of hardiness. An attempt to round up the opinions of representative orchardists of the state as to the normal length of life of some of the common apple varieties was recently made through a questionnaire. In Table II these replies are averaged and the varieties arranged according to life expectancy, and the figures are from a questionnaire sent to representative orchardists.

TABLE II.

*Estimated Length of Life of Apple Varieties Commonly Grown in Minnesota.*

Number of Replies	Variety	Estimated Length of Life in Years
62	Hibernal	37.5
71	Oldenburg	35.5
60	Patten	34.3
54	Transcendant (Crab)	34.3
43	Anisim	28.2
70	Wealthy	26.2
29	Florence (Crab)	26.2
64	Northwestern	16.9
74	All varieties	29.0

From this table it appears that none of our common hardy varieties are able on the average to withstand our Minnesota winters for 40 years. The length of life of these varieties is directly correlated with their hardiness, which is expected in a region where severe winters are frequent. That is, we generally admit that a severe climate shortens the life of apple trees and all of these figures support that view.